

Exercise 6.12.

- a. Show that if L is a CFL and F is finite, $L - F$ is a CFL.
- b. Show that if L is not a CFL and F is finite, $L - F$ is not a CFL.
- c. Show that if L is not a CFL and F is finite, $L \cup F$ is not a CFL.

Exercise 6.13.

For each part below, say whether the statement is true or false, and give reasons for your answer.

- a. If L is a CFL and F is regular, then $L - F$ is a CFL.
- b. If L is not a CFL and F is regular, then $L - F$ is not a CFL.
- c. If L is not a CFL and F is regular, then $L \cup F$ is not a CFL.

Theorem 6.13.

If L_1 is a context-free language and L_2 is a regular language, then $L_1 \cap L_2$ is a CFL.

Exercise 6.8.

Show that if L_1 is a DCFL and L_2 is regular, then $L_1 \cap L_2$ is a DCFL.